

CLAIMS:

1. A processing method for semiconductor devices in a semiconductor fabrication line, comprising the steps of:  
processing a substrate in a first processing apparatus;  
5 transferring the substrate processed in the first processing apparatus to a detecting apparatus without removal of the substrate from the semiconductor fabrication line while continuing fabrication of the semiconductor devices;  
detecting foreign particle defects on the substrate transferred to the detecting apparatus;  
10 determining a foreign particle generation condition of the processing apparatus based on a data from the detecting;  
transferring the substrate detecting in the detecting apparatus to a second processing apparatus in the semiconductor fabrication line; and  
15 processing the substrate in the second processing apparatus, wherein an amount of the foreign particle defects detected in the detecting step is stored in a memory.

2. A processing method according to claim 1, wherein in  
20 the detecting step, detection is performed in a predetermined area of the substrate.

3. A processing method according to claim 1, wherein in the detecting step, detection is completed within a processing time in the processing step.

4. A processing method for semiconductor devices in a semiconductor fabrication line, comprising:

processing a substrate in a first processing apparatus;

transferring the substrate processed in the first

5 processing apparatus to a detecting apparatus without removal of the substrate from the semiconductor fabrication line while continuing fabrication of the semiconductor devices;

detecting foreign particle defects on the substrate transferred to the detecting apparatus within a processing time in the step of processing;

10 storing a data of foreign particle defects detected at the detecting step in a memory; and

controlling an operation of the semiconductor fabrication line in accordance with the data of foreign particle defects detected.

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5. A processing method according to claim 4, wherein in the detecting step, detection is performed in a predetermined area of the substrate.

6. A processing method for semiconductor devices in a semiconductor fabrication line, comprising:

20 processing a substrate in a first processing apparatus which is a component of the semiconductor fabrication line;

detecting foreign particle defects on the substrate processed in the first processing apparatus without removal of the substrate from the semiconductor fabrication line while

continuing fabrication of the semiconductor devices;  
counting an amount of foreign particle defects detected  
at the detecting step; and  
controlling an operation of the semiconductor fabrication  
line in accordance with the data of foreign particle defects  
detected.

5        7. A processing method according to claim 6, wherein  
data of the amount of foreign particle defects of the  
substrate counted in the counting step is stored in a memory.

10        8. A processing method for semiconductor devices in a  
semiconductor fabrication line, comprising:

processing a substrate in a processing apparatus which is  
a component of the semiconductor fabrication line;

15        detecting foreign particle defects on the substrate  
processed in the processing apparatus without removal of the  
substrate from the semiconductor fabrication line while  
continuing fabrication of the semiconductor devices;

20        obtaining information of distribution of foreign particle  
defects on the substrate and storing the obtained information  
in a memory;

wherein the step of detecting foreign particle defects is  
performed in real time.

9. A processing method according to claim 8, further  
comprising a step of determining a foreign particle generation

condition of the processing apparatus using information of detecting.

10. A processing method for semiconductor devices in a semiconductor fabrication line, comprising:

5       processing a substrate in a processing apparatus which is a component of the semiconductor fabrication line;

10      detecting foreign particle defects on the substrate processed in the processing apparatus without removal of the substrate from the semiconductor fabrication line while continuing fabrication of the semiconductor devices; and

15      determining a foreign particle generation condition of the processing apparatus using information of detecting.

11. A processing method according to claim 10, wherein if the foreign particle generation condition of the processing apparatus is determined to be abnormal in the determining step, information of the abnormality is outputted.